Vol. 8. Part 11. Pp. 211-226. 15th November, 1939

IMP. INST. ENT.
LIBRARY
15 NOV 1939
En. 344B
RIAL
PARATE

THE PROCEEDINGS
OF THE
ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

Series B.
TAXONOMY
(being the continuation of Stylops)

World List abbreviation: *Proc. R. ent. Soc. Lond.* (B)

CONTENTS

PAGE

CALLAN, E. McC., B.Sc., A.R.C.S., Ph.D., F.R.E.S. A note on the breeding of *Probethylus callani* Richards (Hymenopt., BETHYLIDAE), an Embiopteran parasite . 223–224

RICHARDS, O. W., F.R.E.S. The BETHYLIDAE subfamily SCLEROGIBBINAE (Hymenoptera) . . . . . 211–223, 17 figs.

TOTTENHAM, Rev. C. Edward, M.A., F.R.E.S. Some notes on the nomenclature of the STAPHYLINIDAE (Coleoptera). Part 1 224–226

LONDON:
PUBLISHED BY THE SOCIETY AND
SOLD AT ITS ROOMS, 41, QUEEN'S GATE, S.W.7

Price 3s. 0d.

THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

Founded, 1833. Incorporated by Royal Charter, 1885.

PATRON—HIS MAJESTY THE KING.

OFFICERS and COUNCIL for the SESSION, 1939–1940.

J. C. F. Fryer, O.B.E., M.A., *President.*

E. A. Cockayne, M.A., M.D., F.R.C.P.
Francis Hemming, C.M.G., C.B.E.
V. B. Wigglesworth, M.A., B.Ch., M.D. } *Vice-Presidents.*

N. D. Riley, *Treasurer.*

O. W. Richards, M.A., D.Sc., *Secretary.*

F. J. Griffin, A.L.A., *Registrar.*

Other Members of Council.

H. M. Edelsten.
C. N. Hawkins.
B. M. Hobby, M.A., D.Phil.
Col. F. A. Labouchere.
Hugh Main, B.Sc.
Sir Guy A. K. Marshall, C.M.G., D.Sc., F.R.S.
A. M. Massee, D.Sc.
The Hon. Miriam Rothschild.
W. R. Thompson, Ph.D., D.Sc., F.R.S.
B. P. Uvarov, D.Sc.
A. Welti.

Finance and House Committee.

Francis Hemming, C.M.G., C.B.E. (Chairman).
Brig.-Gen. B. H. Cooke, C.M.G., C.B.E., D.S.O.
H. Willoughby Ellis, M.I.E.E.
G. Fox-Wilson.
R. W. Lloyd.
A. Welti.

Publication Committee.

W. R. Thompson, Ph.D., D.Sc., F.R.S. (Chairman).
M. Burr, D.Sc., F.G.S., A.R.S.M.
E. A. Cockayne, M.A., M.D., F.R.C.P.
B. M. Hobby, M.A., D.Phil.
A. M. Massee, D.Sc.
Hugh Scott, M.A., Sc.D.

Library Committee.

B. P. Uvarov, D.Sc. (Chairman).
R. B. Benson, M.A.
K. G. Blair, D.Sc.
H. M. Edelsten.
R. W. Lloyd.
W. H. T. Tams.

Committee for the Protection of British Insects.

W. G. Sheldon (Chairman).
Capt. E. Bagwell-Purefoy.
C. L. Collenette.
W. J. Dow.
J. C. F. Fryer, O.B.E., M.A.
Col. F. A. Labouchere.
N. D. Riley.
H. M. Edelsten (Secretary).

The Executive Officers of the Society are *ex-officio* members of all Committees.

DELEGATES OF THE SOCIETY TO:

1. **British National Committee for Biology** (Royal Society).
   Sir Thomas Hudson Beare, LL.D., F.R.S.E., appointed 1933.
   Dr. Karl Jordan, F.R.S., appointed 1936.
2. **Conference of Delegates of Corresponding Societies of the British Association for the Advancement of Science.**
   Mr. H. B. Cott, appointed 1939.
3. **International Congress of Entomology** (Berlin 1938).
   J. C. F. Fryer, O.B.E., M.A. *Francis Hemming, C.M.G., C.B.E.*
   A. D. Imms, M.A., Sc.D., F.R.S.
4. **Local Committee of Management of Wicken Fen.**
   Mr. H. M. Edelsten. *Mr. E. C. Bedwell.*
   [Delegates nominated by Committee for the Protection of British Insects.]
5. **National Trust for Places of Historic Interest or Natural Beauty.**
   Mr. W. G. Sheldon, appointed 1922.
6. **New Forest Association.**
   Mr. W. Fassnidge, appointed 1934.
7. **Royal Meteorological Society. Phenological Committee.**
   Dr. C. B. Williams, appointed 1937.

THE BETHYLIDAE SUBFAMILY SCLEROGIBBINAE (HYMENOPTERA)

By O. W. Richards, F.R.E.S.

I have recently received from my friend Mr. E. McC. Callan a series of both sexes of a remarkable parasite which he bred from Embiids in Trinidad, B.W.I. The proper identification of these specimens necessitated a revision of the group to which they belong. I am much indebted to Mr. R. B. Benson of the British Museum (Natural History) for enabling me to study the material there; to Sign. Dott. Delfa Guiglia and to the director of the Museo civico di Storia naturale, Genova, for the loan of two types and to Dott. Guiglia for information about other specimens; to Dr. C. F. W. Muesebeck and to the authorities of the United States National Museum for the loan of specimens and to Dr. Muesebeck for information as to the type of *Probethylus* Ashmead; to Herr Dr. H. Sachtleben and to the authorities of the Deutsches entomologisches Institut for the loan of a type. To Mr. Callan I am particularly indebted for allowing me to study his very valuable insects.

Probethylus Ashmead, 1902.

Female (only *P. callani* sp. n. known). Ocelli in an equilateral triangle, the posterior ones much nearer to one another than to eyes; mandibles with three distal teeth; maxillary palpi with three segments, labial with two; metanotum not developed; mid tibiae with one spur.

Male. Eyes not separated from occiput by more than one or two ocellar diameters; second radial (" marginal ") cell longer, its costal margin longer than sector of media which forms posterior margin of first radial (" cubital ") cell; vein Cul extending only as a short stump beyond mcu. Type (monobasic) = *Probethylus schwarzi* Ashmead, 1902.

Probethylus schwarzi Ashmead, 1902.

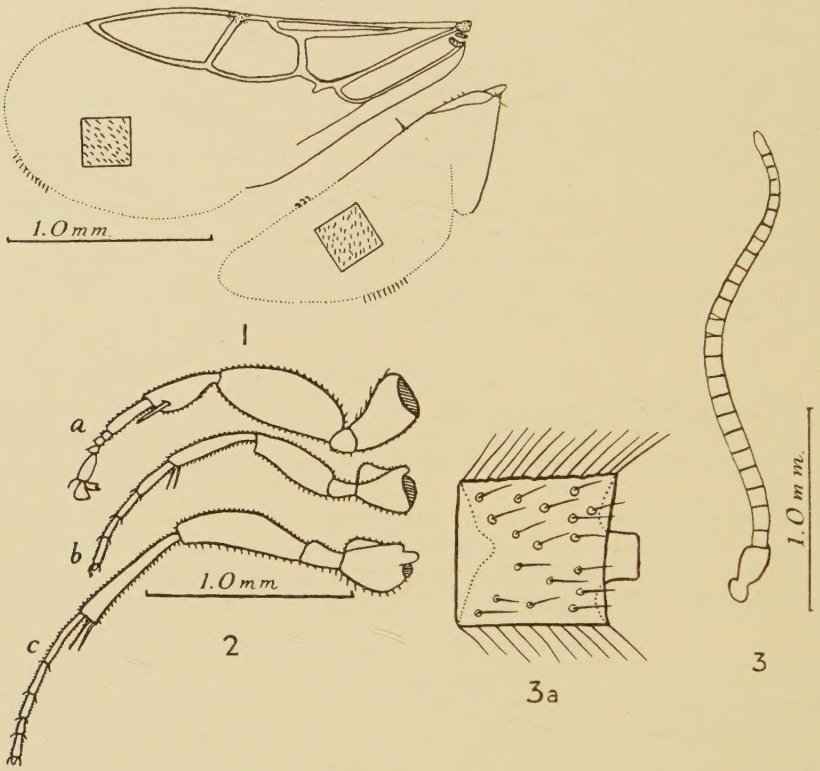
Ashmead described (in just sufficient words to make the name valid) this species from Arizona. Dr. C. F. W. Muesebeck has kindly supplied me with the following information. It is very close to *P. mexicanus* sp. n. described below (p. 216) but the eyes are slightly smaller and rather more widely separated from the occiput. The antennae have twenty-two segments. The propodeum is more evenly punctate without the irregular rugosities. Fore-wing with first radial cell distinctly shorter than the second radial cell, Rs more strongly bent. Notaulices very weak, not punctate, not extending half-way across mesonotum.

Probethylus callani sp. n.

Female. Reddish-testaceous; posterior half of head dorsally, eyes, part of head behind buccal cavity ventrally, scutellum, mesopleuron, small antero-dorsal mark on propodeum, most of mid and hind femora, black or blackish; abdomen brown, anterior part of each tergite darker. Surface covered with microscopic, pale, appressed pubescence which is sericeous and more conspicuous on the abdomen. Length 2·0–2·75 mm.

Head dull, alutaceous, unpunctured, in dorsal view (fig. 10) short-pyriform, somewhat pointed anteriorly, truncate behind, a little longer than greatest width across eyes, inner orbits diverging anteriorly, the distance between the eyes anteriorly about one and a half

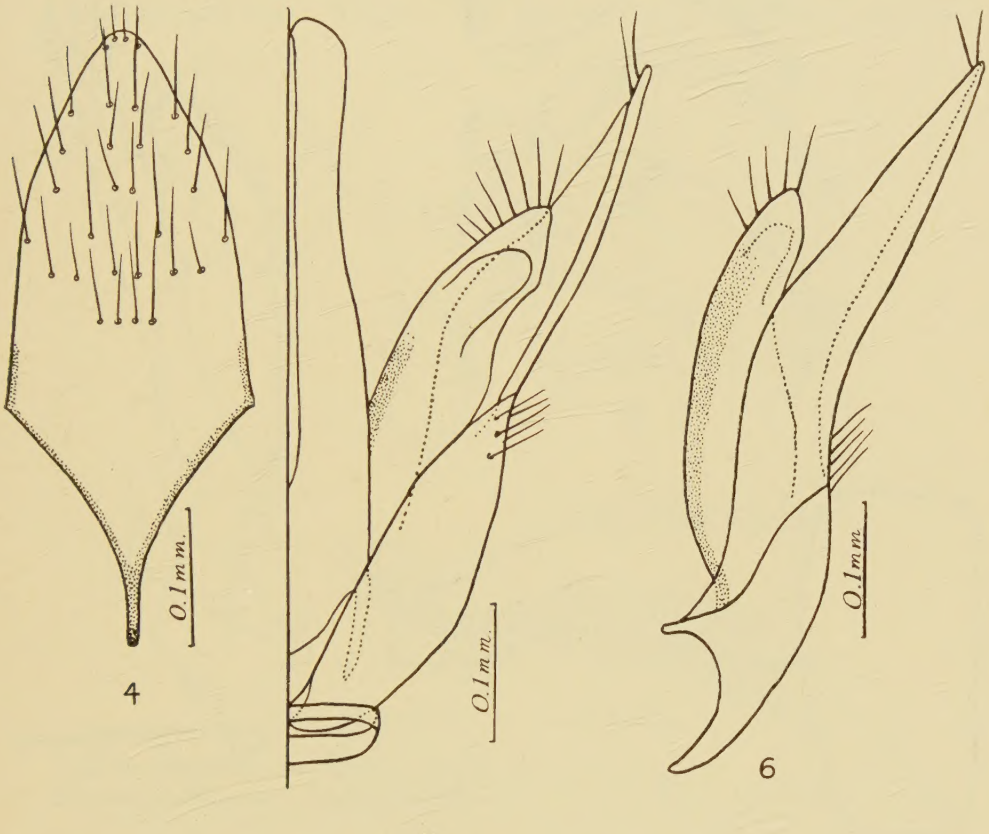
times distance between them posteriorly, area between eyes feebly convex, a feeble circular impression in mid-line just behind front margin; ocelli minute, in an equilateral triangle, POL : OOL = 1, posterior ocelli separated by about their diameter from occiput; eyes very large, pubescent, about half as wide in dorsal view as distance between them, separated from antennal socket by three-quarters length of antennal segment 1, from mandibles by half width of same segment, from occiput by about two ocellar diameters; antennae (fig. 9), gradually tapering, of 20–23 segments, 1 thick, about twice as long as broad, 2 transverse, 3-penultimate quadrate or a little longer, last segment rather more than twice as long as broad; clypeus hidden beneath antennae on ventral aspect of head, very transversely



FIGS. 1–3.—*Probethylus callani* sp. n. 1, wings ♂; 2 a, b, and c, fore, mid and hind legs, ♂; 3, antennae, ♂; a, segment 13 more magnified.

triangular, central part convex, ventral margin truncate, labrum not visible; mandibles narrow, strap-shaped with three distal teeth; maxillary palpi with three segments, third a little longer than first, second hardly more than half as long as third, labial palpi with two segments of about equal length; buccal cavity rather narrowly separated from the foraminal depression which, like occiput, is unmargined. Wings absent; thorax and propodeum dull, alutaceous, unpunctured; pronotum about twice as long as broad, a little broader in front than behind, dorsally nearly flat, lateral aspect at right angles to dorsal, also flat, posterior margin moderately emarginate with mesonotum appearing as small plate just filling in emargination; scutellum well-defined, long-horseshoe-shaped, a little longer than broad, its posterior half inserted into propodeum; metathorax not separately developed; propodeum with dorsal and posterior surfaces in a continuous, gentle curve, transition to

lateral surfaces also gradual, in dorsal view broadest at middle, a little longer than broad; proepisternum very globose, the two halves almost fused at mid-line. Fore legs (fig. 7) strongly thickened, femur in resting position lying along sides of pronotum, fore tibia with ventral edge laminate, basitarsus (fig. 8) with an anterior row of 16 peg-like structures, segments 2–3 each with three pegs, segments 2–4 short, 5 about three-quarters as long as 1, empodium very large, claws bifid; mid coxa with strong antero-dorsal, hind coxa with very strong antero- and postero-dorsal keels, mid and hind femur somewhat grooved ventrally to receive tibia, mid tibia with one long and one microscopic (only visible in balsam mount

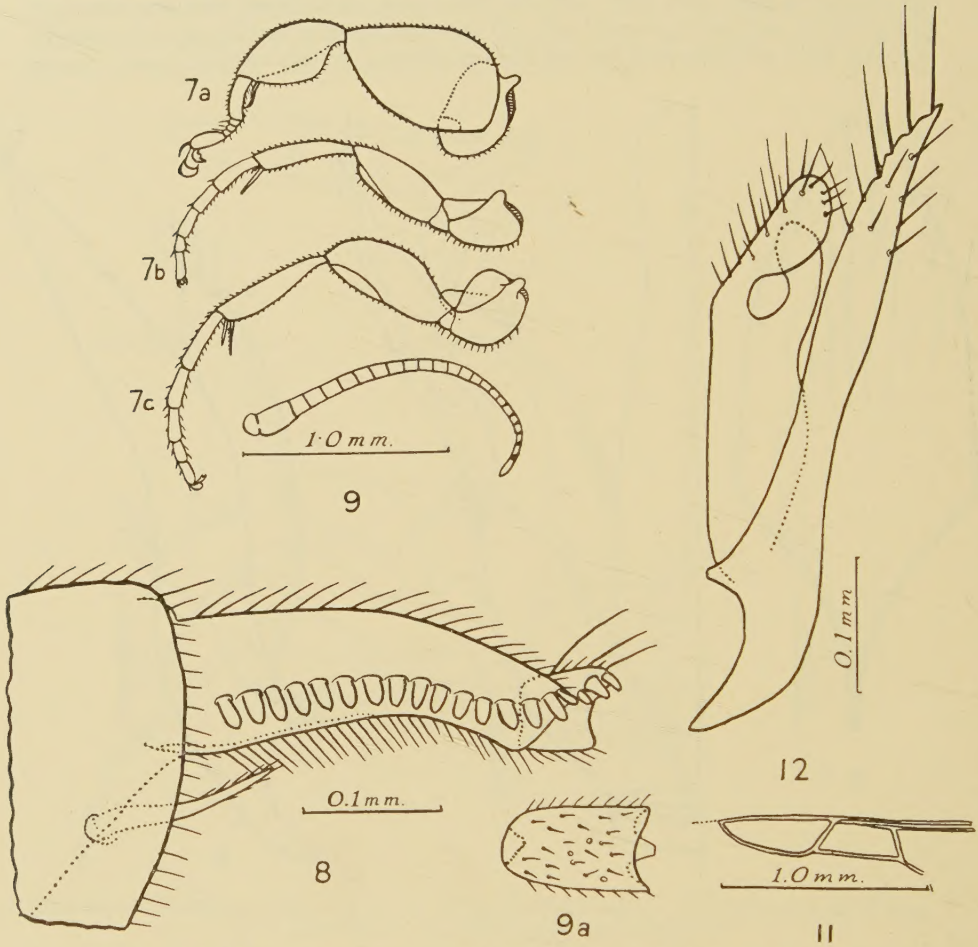


FIGS. 4–6.—*Probethylus callani* sp. n. 4, morphological ninth sternite, ♂; 5, left half ♂ genitalia, dorsal view; 6, right half ♂ genitalia (without parameres), ventral view.

under high magnification) spur, hind tibia with two long spurs of which inner one is strongly pectinate, tarsus longer than corresponding tibia, claws bifid. Abdomen not quite as long as thorax + propodeum, strongly pointed behind, with six visible segments, first campanuliform, longer than others, 2–5 transverse, 6 elongate-triangular; sting usually a little projecting.

Male. Black; small area to which antennae are attached, antennae, mandibles and other mouthparts, fore and mid tibiae and tarsi, hind tarsi pale yellow-brown; coxae, femora and hind tibiae and tegulae darker brown. Wings hyaline, venation very pale. Whole surface covered with moderately close, semi-erect, short, brown pubescence. Length 2·0 mm.

Head dull, very finely, hardly perceptibly punctured (more shagreened), in dorsal view nearly circular but (including eyes) a little transverse, front margin of circle produced into small, transverse, subrectangular plate to which antennae are attached; inner orbits almost parallel, hardly diverging anteriorly, area between eyes very feebly convex, about one half times longer than broad, ocelli moderately large, in an equilateral triangle, POL:



Figs. 7–9.—*Probethylus callani* sp. n. 7 a, b, and c, fore, mid and hind legs of ♀; 8, fore tarsal segments 1–3, ♀; 9, antennae, ♀; a, segment 13 more magnified.

Figs. 11–12.—11, *P. mexicanus* sp. n. fore-wing, region of pterostigma, ♂; 12, ♂ genitalia, left half (without parameres), dorsal view.

OOL = 3 : 2 (or 4 : 3), posterior ocelli separated by twice their diameter from occiput; eyes very large, pubescent, about two-fifths as wide in dorsal view as area between them, separated from mandibles by about half width of antennal segment 1, from occiput (in side view) by hardly more than an ocellar diameter; antennae (fig. 3) with 20–25 segments, in structure as in female but with somewhat longer pubescence; clypeus, mouthparts and foraminal depression similar. Pronotum dorsally rather coarsely granulate, strongly transverse, posterior margin broadly emarginate, anterior corners distinctly angulate, sides diverging a little posteriorly, about two and a half times as long as length at mid line,

anterior limit of dorsal aspect falling almost perpendicularly to attachment of head, lateral aspect subrectangular, smooth and shining; mesonotum moderately shining (in Mexican specimen more shagreened), closely but shallowly punctured, notaulices and parapsidal furrows complete; scutellum two-thirds as long as mesonotum, finely punctured; metanotum (" postscutellum ") very narrow; propodeum with dorsal and posterior surfaces very coarsely granulate, lateral surfaces more shining, finely granulate, posterior surface moderately truncate; mesopleuron rather dull, finely punctured, prepectus sharply marked off, no central circular pit, mesosternum not separated off by a furrow, centrally with strong longitudinal depression; metapleuron hardly separated from propodeum, almost obliterated below. Wings as in fig. 1 (first and second radial cells somewhat more

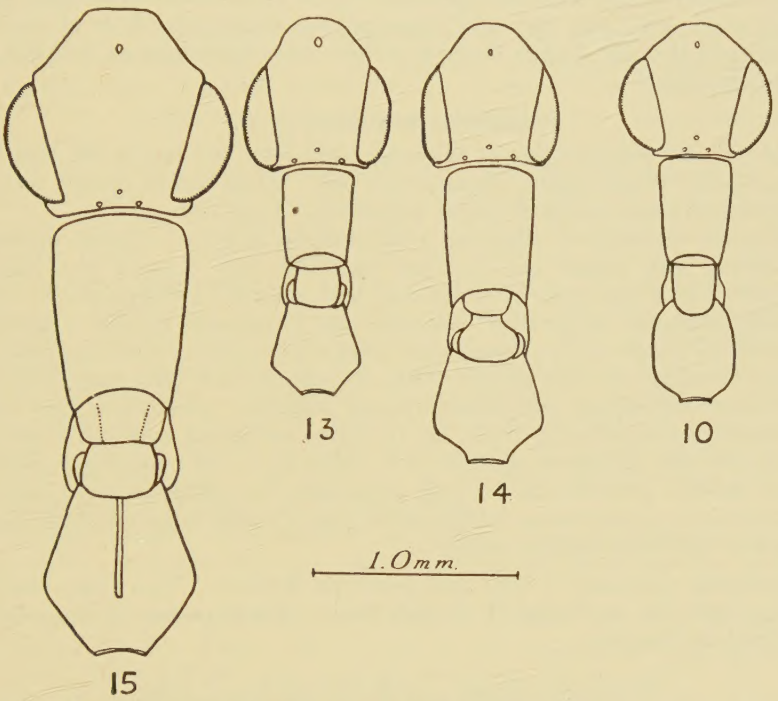


Fig. 10.—*P. mexicanus* sp. n. head, thorax and propodeum, ♀.

Figs. 13–15.—13, *Sclerogibba africana* (Kieff.). Head, thorax and propodeum, ♀; 14, *S. embiidarum* (Kieff.), the same, ♀; 15, *S. magrettii* (Kieff.), the same, ♀.

elongate in Mexican specimen), with short marginal fringe; hind-wings with one straight proximal and three curved distal hamuli. Legs (fig. 2) similar to female but less thickened, fore tarsus with no peg-like structures, mid tibia with two spurs of equal length. Abdomen shining, flattened dorsally, posteriorly somewhat pointed, as long as thorax + propodeum, with seven visible segments; morphological ninth sternite (fig. 4) elongate, with anterior stalk, posteriorly considerably produced but rounded; genitalia (figs. 5–6) with a narrow ring-like gonocardo, gonosquama more or less separate from gonostipes, with two or three distal bristles and some more proximal ones, volsella consisting of two lobes, a small dorsal one lying on top of posterior part of larger one which is anteriorly not sharply marked off from gonostipes, parameres narrow, distally rounded.

Specimens examined :—B.W.I., Trinidad : St. Augustine, *ex* Embiid,

type ♀ and allotype ♂, 8 ♂♂ paratypes 25.iii.1938 (*E. McC. Callan*), same date, 10 ♀♀ paratypes 28.iii.1938 (*E. McC. Callan*); Mexico : Vera Cruz, Cordoba, ♂ paratype 25.iv.1908 (*Dr. A. Fenyes*) (U.S. Nat. Mus.).

Of the Trinidad specimens the type and allotype will be deposited in the British Museum and paratypes will be deposited there, in the U.S. Nat. Mus., in the Deutsches entom. Institut, in the Mus. civ. Stor. Nat., Genova, and in my collection.

In the females the antennal segment-numbers were :—4 23, 1 23 left 22 right, 2 22, 2 20, 2 broken; in the male :—1 25, 4 23 (including ♂ Mexico), 3 22, 2 20.

The cocoon of one Trinidad specimen (♀) is white, semitransparent, cigar-shaped, 4·5 × 1·0 mm.; the adult emerged by an irregular hole at one end. I understand that Mr. Callan hopes to obtain more specimens so that the host may be identified.

Probethylus mexicanus sp. n.

Male. Black; proximal part of antennae, mouthparts and legs brown, tarsi paler. Tegulae brown. Wings hyaline, venation very pale. Whole surface covered with very fine, moderately close, semi-erect, greyish pubescence. Length 2·0 mm.

Structurally similar to *P. callani* sp. n. but differing as follows :—Head considerably more shining with sparser but very fine punctures, area between eyes quadrate, POL : OOL = 2 : 3, eyes rather more separated from mandibles and separated by at least two ocellar diameters from occiput; antennae with 25 segments (broken in paratype); mesonotum and scutellum more shining, more sparsely and rather more strongly punctured, notaulices incomplete for their posterior fifth; propodeum much more finely sculptured, largely smooth and shining, with sparse, irregular rugosities; mesopleuron more shining, unpunctured postero-ventrally; wings (fig. 11) similar but second radial cell a little more elongate even than in Mexican specimen of *P. callani* sp. n., Rs considerably more bent forwards distally; genitalia (fig. 12) with gonosquama and gonostipes fused, bearing a continuous series of about twelve bristles, dorsal lobe of volsella larger and better defined, ventral lobe with about eighteen bristles.

Specimens examined :—type and paratype Mexico : Vera Cruz, Cordoba, ♂♂ 25.iv.1908 (*Dr. A. Fenyes*) (U.S. Nat. Mus.). Paratype now in the collection of the British Museum.

Sclerogibba Riggio and T. Stefani-Perez, 1888.

Female. Similar to *Probethylus* Ashmead (described above) except in the following characters :—Ocelli in a broad-based triangle, posterior ones much further from one another than from median one, often much nearer to eyes than to one another; mandibles with two distal teeth, maxillary palpi with five segments, labial with three (these characters are somewhat doubtful since no specimen was dissected); metanotum more or less visible at each side of scutellum posteriorly; mid tibiae with two spurs.

Male (chiefly from the description of Masi, 1933). Similar to *Probethylus* (described below) but differing as follows :—Eyes more widely separated from occiput, by more than one-third their length (or at least three or four ocellar diameters); second radial (" marginal ") cell shorter, its costal margin shorter than or as long as sector of media which forms posterior margin of first radial (" cubital ") cell; vein cu1 extending some distance beyond mcu; sometimes part of M 3 + 4 present with *im*1 enclosing a cell (venation according to Bradley's notation).

Type (monobasic) = *Sclerogibba crassifemorata* Riggio and T. Stefani-Perez, 1888 ♀ = ? *Cryptobethylus mancinii* Masi, 1933 ♂.

Synonyms. *Tanynotus* Cameron, 1904 **syn. n.** Type (monobasic) = *T. rufithorax* Cameron, 1904; *Mystrocnemis* Kieffer, 1905a **syn. n.** Type (monobasic) = *M. erythrothorax* Kieffer, 1905a; *Prosclerogibba* Kieffer, 1905 **syn. n.** Type (only species placed in genus when species first cited) = *P. magrettii* Kieffer, 1913; *Cryptobethylus* Marshall *in* Kieffer and Marshall, 1905 **syn. n.** Type (only species placed in genus when species first cited) = *C. mancinii* Masi, 1933; *Lithobiocerus* Bridwell, 1919 **syn. n.** Type (monobasic) = *L. vagabundus* Bridwell, 1919.

Owing to the very strong sexual dimorphism in the group and to the very imperfect descriptions published by Kieffer, the above synonymy needs some explanation.

The type ♀ of *Sclerogibba crassifemorata* Rig. and Stef.-Perez is destroyed (information received from Dott. D. Guiglia). The original description has been supplemented by Kieffer (1905 : 257, pl. 16, figs. 1, 2, 6, 7) and (1914 : 563, figs. 202–204). Kieffer's remarks are in part contradictory. In his descriptions, he states that the fore tibia is strongly thickened but in his key (1914 : 560) he partly separates it and *Prosclerogibba* from *Mystrocnemis* because the tibiae are not thickened. As the fore tibia of *Prosclerogibba* is certainly thickened, I feel sure that that of *Sclerogibba* is also. This is supported by the original description (1888). Kieffer states that the ocelli are absent; as they are difficult to see in this group and as they are present in *Prosclerogibba* in which Kieffer also states that they are absent, I assume that they are present in *Sclerogibba*. Kieffer describes a difference in the claws of *Sclerogibba* and *Mystrocnemis*; I suspect that he was really comparing the front claws of the first with the hind ones of the second. Their structure is not easy to make out in this group and I propose to ignore this character until more material is available. Finally, Kieffer probably overlooked the small mesonotum and misnamed the scutellum; his figure of the thorax is unconvincing and very different from that of Riggio and Stefani-Perez.

Tanynotus Cameron was described as having about 40 antennal segments and no ocelli. Actually, the type has 25 antennal segments and the ocelli are present.

Mystrocnemis was published by Kieffer (1905a) for one species, *M. erythrothorax* Kieffer, 1905a; the ♀ type of this should be in the Mus. civ. Genova but Dott. Guiglia tells me that it cannot now be traced. In 1905b (for dates of publication see note p. 223), Kieffer published a second species, *M. africana* and refers to, without describing, a second species, *M. asiatica*. The latter name is a *nomen nudum* which is almost certainly a synonym of *M. erythrothorax* Kieff.

I have examined the type of *Prosclerogibba magrettii* Kieffer, 1913 and I do not think that it shows any fundamental differences from species of *Sclerogibba*. The somewhat better developed mesothorax is perhaps associated with its larger size.

Kieffer (1905 : 259, pl. 2, fig. 12) published a genus *Cryptobethylus* from T. A. Marshall's manuscript. I suspect that the figure of the wing-venation is not altogether accurate, particularly as regards the second radial (" marginal ") cell. As no species were originally included in *Cryptobethylus*, the one described by Masi (1933), *C. mancinii*, becomes the type. It is highly probable that this is the unknown male of *S. crassifemorata* Rig. and Stef. Dr. Masi considered the differences too great for this to be probable, but Mr. Callan's series, showing the same sort of dimorphism in an allied genus, supports my view.

Lithobiocerus Bridwell, 1919 was described from a single female captured in Hawaii, Honolulu. Dr. C. F. W. Muesebeck tells me that it is now preserved (in very bad condition) in the U.S. National Museum.

Bridwell states that the female has one mid tibial spur but Dr. Muesebeck tells me that there are really two. The labial palpi are stated to have six segments. This is clearly a misprint for the maxillary palpi and I feel that these require re-examination (the type is now headless). Bridwell also describes a constriction in the mesonotum. I think that, like Kieffer, he is really referring to the scutellum; probably the structure was quite typical of the group but he was misled by Kieffer's inaccurate figure. Dr. Muesebeck is of the opinion that *Lithobiocerus* is clearly a synonym of *Sclerogibba*.

S. crassifemorata Riggio and T. Stefani-Perez, 1888 ♀.

? *Cryptobethylus mancinii* Masi, 1933 ♂.

The unique ♀ type was found in Italy, Island of Ustica, Falconiera. It is now destroyed. The type of *C. mancinii*, fully described by Masi, was captured in Italy, Island of Capraia. It is rather unlikely that there are two species of this genus in Italy, so that the ♂ and ♀ may be provisionally associated.

S. africana (Kieffer, 1905b).

Mystrocnemis africana Kieffer, 1905b.

Female. Head dorsally black except for the prominence on which antennae are inserted; clypeus brownish; antennal prominence, antennae, thorax, propodeum and legs reddish-yellow; mouthparts whitish-yellow; abdomen brownish-black, posterior margins of segments somewhat paler; head with short, moderately close, backwardly directed, pale pubescence; rest of body with short, appressed, pale pubescence. Length 4·0 mm.

Resembles *Probethylus callani* sp. n. (above) except in following particulars :—Head (fig. 13) in dorsal view longer, but not quite so long as in *S. embiidarum* (Kieff.), one-quarter longer than greatest width across eyes; ocelli smaller, ocellar triangle with posterior side half as long again as other two, posterior ocelli on occiput, POL : OOL = 2·5 : 1; eyes in dorsal view less than half as wide as distance between them, separated from occipital margin posteriorly by no more than an ocellar diameter; antennae with 26 segments, 1 thicker, hardly twice as long as broad, 2 transverse, 3–13 just transverse, 14–25 about quadrate, 26 a little longer; mandibles probably with two distal teeth; maxillary palpi probably with five segments (four visible), labial palpi invisible; pronotum a little longer (not so long as *S. embiidarum* (Kieff.)), hardly broader anteriorly than posteriorly, a little more than twice as long as broad; traces of metanotum evident laterally; propodeum about as in *M. embiidarum* (Kieff.) but with distinct central, longitudinal impression; fore tarsi apparently with peg-like structures; mid tibiae with two equal, moderately long spurs.

Specimens examined :—Type Portuguese Guinea : Bolama, ♀ vi–xii.1899 (*L. Fea*) (Mus. civ. Stor. nat. Genova).

Sclerogibba rufithorax (Cameron, 1904).

Tanynotus rufithorax Cameron, 1904.
? *Mystrocnemis capensis* Brues, 1906.

Female. Coloured as in *Probethylus callani* sp. n. (above) but pale parts redder. Length 4·0 mm.

Structurally resembles *P. callani* sp. n. except in following particulars :—Head in dorsal view a little longer (about as in *S. magrettii* (Kieff.)); median ocellus very small, posterior

side of ocellar triangle about one and a half times as long as other two, posterior ocelli on occiput, POL : OOL = 5 : 4; eyes separated from occipital margin posteriorly by one and a half ocellar diameters, from antennal sockets by three-quarters length of antennal segment 1, from mandibles by half width of same segment; antennae with 25 segments; tip of mandibles and labial palpi invisible, maxillary palpi probably with five segments (four visible); pronotum a little longer, more parallel-sided, two and a half times as long as broad, with an impressed central line; mesonotum very small, with weak longitudinal furrows; scutellum of same general shape but about as long as broad; metanotum just visible laterally; propodeum with faint traces of central impression anteriorly, considerably longer, sides almost parallel, hardly diverging posteriorly; fore tarsi with pegs apparently similar in arrangement; mid coxae with dorsal keel much less strong; mid tibiae with some very short, black spines on dorsal surface, with two equal, moderately long spurs.

Specimens examined :—Type, Cape Colony : Dunbrody, ♀ (*I. A. O'Neil*) (Brit. Mus.).

Brues (1906) described a *Mystrocnemis capensis* from Natal, Sundays River. The description agrees well with *S. rufithorax* (Cam.) of which it may well be a synonym; the type should be in the Milwaukee Public Museum.

Sclerogibba embiidarum (Kieffer, 1925).

Mystrocnemis embiidarum Kieffer, 1925.

Female. Pale parts of head and thorax more yellowish in type (perhaps because of original preservation in alcohol), not in other specimens; head with posterior two-thirds dorsally black, rest of head, antennae, thorax, propodeum and legs pale; abdomen blackish-brown, posterior quarter of tergites 2–5 testaceous. Length 3·3–4·5 mm.

Structurally resembles *P. callani* sp. n. (above) except in following particulars :—Head in dorsal view long-pyriform, one-third longer than greatest width of head across eyes, with traces of sparse fine punctures on top of alutaceous sculpture; ocelli smaller, especially median one, ocellar triangle with posterior side half as long again as other two, posterior ones almost on occiput, POL : OOL = 2·5 : 1; eyes in dorsal view rather less than half as wide as distance between them, separated from occipital margin posteriorly by an ocellar diameter; antennae with 24–27 segments (24 in type, 26 and 27 in two other specimens, one more with broken antennae), 1 more pyriform, 2 very short, 3–13 transverse, 14–24 (25–26) quadrate, last segment about twice as long as broad; mandibles apparently with two distal teeth; maxillary palpi with four segments visible and therefore probably with five in all, labial palpi with two long segments visible, probably with three in all; pronotum longer, hardly at all broadened anteriorly, two and a half times as long as broad; scutellum relatively longer, more contracted anteriorly; traces of metanotum evident laterally; propodeum longer, at least one and a half times as long as broad, broadest behind middle, sides straight, disc with trace of central impressed line; fore tarsi with rather similar arrangement of pegs but these are in transverse rows of three on most of basitarsus and there are three on segment 2 and two on 3; mid tibia with two equal spurs of moderate length; abdomen relatively a little longer.

Specimens examined :—Type, Ceylon : Colombo, bred *Oligotoma greeniana* End., ♀ ix.1924 (*K. Friedrichs*) (Deutsches ent. Inst.); India : Madras, Mangalore, 3 ♀♀ vi.1926 (*J. C. Bridwell*) (U.S. Nat. Mus.).

Sclerogibba erythrothorax (Kieffer, 1905b).

Mystrocnemis erythrothorax Kieffer, 1905b.
? *M. asiatica* Kieffer, 1905a (*nomen nudum*).

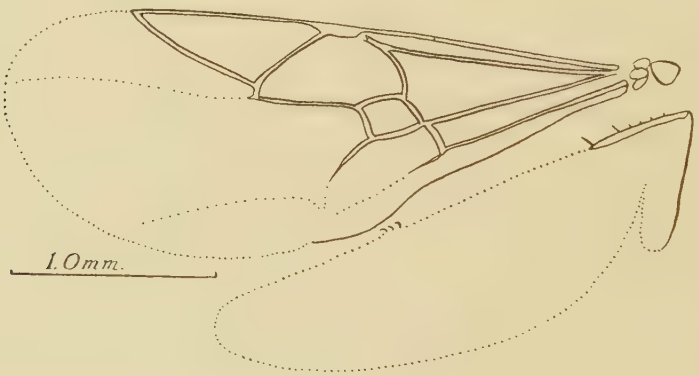
As stated above (p. 217) the type of this species cannot now be traced; there is nothing in the description to differentiate it from *S. embiidarum* (Kieff.).

Sclerogibba magrettii (Kieffer, 1913).

Prosclerogibba magrettii Kieffer, 1913.

Female. Black, anterior third of dorsal part of head, antennae, mouthparts, thorax, propodeum and legs reddish-testaceous; central part of antennae a little darker; abdomen brownish-black, posterior margin of tergites hardly lighter. Head, thorax, propodeum and legs with semi-erect, reddish pubescence which is longer and denser on head; abdomen with very short, appressed, greyish pubescence. Length 5·0 mm.

Structurally similar to *Probethylus callani* sp. n. except in following particulars:—Head with sparse, fine punctures on top of alutaceous sculpture, area between eyes somewhat more raised above them anteriorly, ocellar triangle with posterior side fully one and a half times as long as other two sides, POL : OOL = 1, posterior ocelli on the occipital margin, eyes in dorsal view hardly more than one-quarter as broad as distance between them, separated from occiput by three ocellar diameters, separated from antennal socket by about length of antennal segment 1; antennae with 29 segments, 1 hardly twice as long as broad, with very large proximo-ventral flange, 2 very short and transverse, 3 quadrate, 4–22 just transverse, 23–28 quadrate, 29 a little longer; mandibles apparently with two distal teeth; maxillary palpi probably with five segments (four visible), labial palpi not visible; mesonotum relatively longer, less than twice as broad as long, with traces of longitudinal furrows; scutellum a little broader than long; traces of metanotum visible laterally; propodeum relatively longer, sides at first straight and divergent, then more strongly convergent, with strong, weakly punctured, central impression; fore tarsi with no peg-like structures visible in unprepared specimens; mid tibiae with two equal, moderately long spurs.



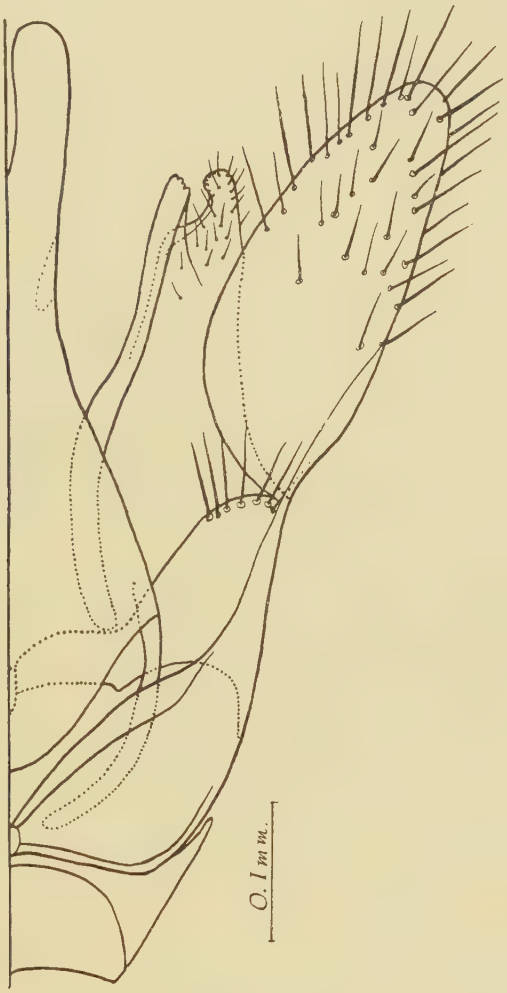
16

Fig. 16.—Wings of *S. turneri* sp. n., ♂.

Specimen examined:—Type N. Africa: Eritrea, ♀ 1900 (*P. Magretti*) (Mus. civ. Genova).

After the type of *S. magrettii* (Kieff.) had been returned, a second specimen of the species was found amongst the collection made by the British Museum Expedition to S.W. Arabia, 1938. This female differs from the type as follows:—

Head reddish, posterior half hardly perceptibly darkened; anterior half of propodeum, mid and hind femora and tibiae mainly dark brown; length 4·5 mm.; antennae broken, with 27 + segments; scutellum a little more elongate, outline oval, about as long as broad.



17

Fig. 17.—Left half ♂ genitalia, dorsal, same species.

Yemen: Beit Baus, about 5 miles S. of San'a, ca. 7900 ft., 28.i.1938 (*H. Scott and E. B. Britton*).

S. vagabunda (Bridwell, 1919).

Lithobiocerus vagabundus Bridwell, 1919.

Closely allied to (perhaps the same as) *S. embiidarum* (Kieff.). One female from Hawaii (see p. 218).

S. turneri sp. n.

Male. Black; antennae and legs browner, tibial spurs whitish. Wings hyaline, venation dark brown. Whole surface with moderately close, semi-erect, short, greyish pubescence. Length 2·5–3·0 mm.

Structurally resembles *Probethylus callani* sp. n. except:—punctures of head rather more distinct, but very fine and close, central anterior impression usually a shallow furrow rather than a circular pit, area between eyes more nearly square, posterior side of ocellar triangle somewhat longer than the other two, POL : OOL = 5 : 4, posterior ocelli separated by four times their diameter from occiput; eyes in dorsal view only one-quarter as wide as distance between them, separated from mandibles by one-third or less diameter of segment 1 of antennae, from occiput (in side view) by three or four ocellar diameters; antennae with 25–30 segments; mandibles curved, with three distal teeth, the central one very small; labrum in dissected specimen a narrowly triangular, little sclerotised plate bearing two distal bristles; maxillary palpi with probably six segments, 1–2 moderately long, about two and a half times as long as broad, 3 much thicker, oval, hardly twice as long as broad, 4 long and narrow, as long as 1 + 2, 5 two-thirds as long as 4, end of 5 broken in single specimen dissected but it probably bore a sixth segment; labial palpi with three segments all of about same moderate length. Pronotum with more or less distinct traces of central impressed line, anterior corners less angulate, lateral aspect duller; propodeum dull, coarsely shagreened with traces of a weak raised network of keels and a complete rather strong central keel. Wings as in fig. 16, hind-wing with two straight proximal and three curved distal hamuli. Abdomen with sternite 9 (morphological ninth) as in *P. callani* sp. n. but anterior part of plate somewhat more parallel-sided; genitalia fig. 17.

Specimens examined:—S. Africa, East Cape Province, Katberg, 4000 ft., 90 ♂, 1 ex. xii.1932, 2 ex. 1–15.i.1933, 2 ex. 15–30.i.1933, 2 ex. (including type) 1–10.ii.1933, 2 ex. 19–26.ii.1933 (*R. E. Turner*) (B.M.).

The number of antennal segments in these specimens (in the above order) was:—27, 27, 30, 25, 29, 26, 29, 28, broken.

There is little doubt that this species with its more complete venation and somewhat different genitalia will eventually be placed in some genus other than *Sclerogibba*. Until the female is known and particularly till it is shown whether *Tanynotus rufithorax* Cameron is or is not the female, I think it is best left in *Sclerogibba*.

Key to the recognisable species.

♀♀.

1. Mid tibia with two spurs . . . . . 2.
–. Mid tibia with one spur. (POL : OOL = 1). . *Probethylus callani* sp. n.
2. Prothorax anteriorly and femora mainly dark brown *Sclerogibba crassifemorata* Rig. and T. Stef.
–. Prothorax entirely reddish . . . . . 3.
3. Pronotum with an impressed central line. Mid tibia with minute black spines. (POL : OOL = 5 : 4) . . . . . *S. rufithorax* (Cam.).
–. Pronotum without an impressed line. Mid tibia only pubescent . . . 4.
4. Propodeum with a central impressed line. Scutellar margins parallel . . 5.
–. Propodeum with no distinct impressed line. Scutellar margins anteriorly approximated. (POL : OOL = 2·5 : 1) . . . . *S. embiidarum* (Kieff.).
5. Larger; scutellum broader than long; mesonotal furrows distinct; POL : OOL = 1 : 1 . . . . . *S. magrettii* (Kieff.).
–. Smaller; scutellum about quadrate; mesonotal furrows not distinct; POL : OOL = 2·5 : 1 . . . . . *S. africana* (Kieff.).

♂♂.

1. Cross vein *im*1 present in fore-wing, so that there is a closed intermedian cell. Eyes separated by 3–4 ocellar diameters from occiput . *S. turneri* sp. n.
–. This cross vein absent . . . . . 2.
2. Eyes separated by one-third their length from occiput *S. crassifemorata* Rig. and T. Stef.
–. Eyes not separated by more than two ocellar diameters from occiput . . . 3.
3. Head and mesonotum more shagreened, less punctured, duller. Notaulices complete . . . . . *P. callani* sp. n.
–. Head and mesonotum shining, finely punctured. Notaulices incomplete 4.
4. Notaulices extremely weak, not punctate, not extending half-way across mesonotum . . . . . *P. schwarzii* Ashmd.
–. Notaulices stronger, punctate, extending four-fifths of the way across mesonotum . . . . . *P. mexicanus* sp. n.

References.

Ashmead, W. H., 1902, Classification of the fossorial, predaceous and parasitic wasps, of the superfamily Vespoidea. Family XXXII. Bethylidae. *Canad. Ent.*, **34** : 268–273.

Bridwell, J. C., 1919, Some notes on Hawaiian and other Bethylidae (Hymenoptera) with descriptions of new species. *Proc. Hawaii. ent. Soc.*, **4** : 21–38.

Brues, C. T., 1906, Descriptions of parasitic Hymenoptera from Cape Colony. *Bull. Wisconsin Soc. nat. Hist.*, (2) **4** : 103–112, 1 pl.

Cameron, P., 1904, On the Hymenoptera of the Albany Museum, Grahamstown. (Second paper.) *Rec. Albany Mus.*, **1** : 185–244.

Kieffer, J. J., 1905, Proctotrypidae, *in* André, *Spec. Hym. Eur.*, **9**.

——, 1905a.[1] Description de nouveaux Proctotrypides exotiques. *Ann. Soc. sci. Bruxelles*, **29** : 95–142, 1 pl.

——, 1905b.[1] Description de nouveaux Dryininae et Bethylinae du Musée civique de Gênes. *Ann. Mus. Genova*, **41** : 351–412.

——, 1914, Bethylidae, *Das Tierreich*, **41**.

——, 1925, Ein neuer, von Prof. Dr. Friedrichs gezüchteter Embiidenparasit. *Ent. Mitt.*, **14** : 236–237.

Masi, L., 1933, Raccolte entomologiche nell'Isola di Capraia fatte da C. Mancini e F. Capra (1927–1931). *Mem. Soc. ent. Ital.*, **11** : 181–205, 1 fig.

Riggio, G., and Stefani-Perez, T. de, 1888, Sopra alcuni Imenotteri dell'Isola di Ustica. *Natural. Sicil.*, **7** : 145–150, 1 pl.

A NOTE ON THE BREEDING OF *PROBETHYLUS CALLANI* RICHARDS (HYMENOPT., BETHYLIDAE), AN EMBIOPTERAN PARASITE

By E. McC. Callan, B.Sc., A.R.C.S., Ph.D., F.R.E.S.

Embioptera appear to be widespread in Trinidad, B.W.I., and are not infrequently encountered living in colonies beneath their silken webs on the trunks of trees in virgin and secondary forest and in cacao and grapefruit plantations. They seem to be rather more abundant in the dry season which extends from January to April. In 1938 some twenty complete colonies with their webs

[1] 1905a was received at the British Museum (Natural History) library on 7.ii.1905. 1905b (although the volume is for 1904) was received at the above library on 5.v.1905 and at the library of the Royal Ent. Soc. Lond. on 3.v.1905. I think there is no doubt that 1905a was published before 1905b. I am indebted to Mr. F. J. Griffin for these facts.

were removed from trees and kept alive in petri dishes, and numerous others were observed in the field but not collected.

P. callani was bred from only one of these colonies found on the trunk of a grapefruit tree in a garden in St. Augustine on 25.iii.1938. This colony when collected consisted of a few adult males and females and numerous nymphs of various stages, and was kept alive in a large petri dish for about six weeks. A number of nymphs eventually became adults, but others were observed to be parasitised. The parasitic larvae were ectophagous and bright yellow in colour. They invariably occupied a transverse position on the dorsal surface of the thorax of the host, being attached usually between the head and prothorax or between the pro- and mesothoracic segments. Up to the time when the larvae were about half-grown, they appeared to have little effect on the parasitised nymphs, which were fully as active as those unparasitised. Later the nymphs became sluggish until finally killed by the parasite. The larvae continued to feed upon their dead hosts until the body contents were consumed, and pupated near the host remains within a tough cocoon. Cocoons were rendered somewhat inconspicuous in the tunnels of the web due to adhering Embiopteran excretal pellets. On emergence both sexes of *P. callani* were very active, the winged males flying from the web while the wingless females remained within its tunnels.

It was hoped to make more detailed observations on this parasite, but repeated search yielded no further specimens, and it would appear that it is of some rarity.

SOME NOTES ON THE NOMENCLATURE OF THE STAPHYLINIDAE (COLEOPTERA)

Part 1.

By Rev. C. Edward Tottenham, M.A., F.R.E.S.

During the course of the preparation of a paper on the generic names of British Staphylinidae undertaken at the request of the Committee for Generic Nomenclature of the Royal Entomological Society of London, three facts soon became obvious. Firstly, a number of genera were found for which no citation of genotype could be traced. Although some of these had, rightly or wrongly, been sunk as synonyms, yet it was necessary that they should have types fixed in order to stabilise the synonymy, or to show whether, and in what sense, the names would be available, should it be necessary to divide a genus. Secondly, many generic and subgeneric names have come to be used in a sense other than that which is consistent with the first type fixation. The correction of these errors has resulted in a number of genera or subgenera each requiring a new name. Thirdly, by noting the generic name under which each species was described, a number of homonyms have been detected.

It is the purpose of this paper to fix types for all the genera containing British species for which no genotype has been traced and to supply new names for genera and species where they are required. Since in my subsequent paper I omit synonyms which have never been applied to British species, I include here those few which are at present without type-citations. I have also included a few necessary changes in nomenclature of species of the genus *Philonthus*, where preoccupied names have been detected during studies on this genus.

I. New Generic Names.

Abinothum nom. n. and **Onibathum** nom. n.

The name *Eusphalerum* Kraatz, 1857 (*Nat. Ins. Deutsch. Col.* **2** : 1003), must be used for the genus *Anthobium* Erichson & Auct. (*nec* Samouelle) since *melanocephalum* Marsham, 1802, the type of Samouelle's genus, belongs in the genus *Lathrimaeum* Erichson.

Whereas Kraatz only placed one species in *Eusphalerum* and retained the other species in *Anthobium*, Ganglbauer (1895) placed some of the species which Kraatz kept in *Anthobium* in *Eusphalerum*. The two genera of these two authors, therefore, did not coincide entirely. This is apt to lead to confusion if it is desired to divide the genus, especially as the name *Anthobium* cannot be used. I propose the following arrangement :—

Subgenus *Eusphalerum* s.str. (= *Eusphalerum sensu* Kraatz = *Eusphalerum pars, sensu* Ganglbauer).

Type (genus monobasic) = *Omalium primulae* Stephens, 1834.

Subgenus **Abinothum** nom. n. (= *Anthobium pars sensu* Kraatz = *Anthobium sensu* Ganglbauer).

Type (here fixed) = *Anthobium longipenne* Erichson, 1839.

Subgenus **Onibathum** nom. n. (= *Anthobium pars sensu* Kraatz = *Eusphalerum pars sensu* Ganglbauer).

Type (here fixed) = *Silpha minuta* Fabricius, 1792.

Craetopycrus nom. n.

Thomson, 1859 (*Skand. Coleopt.* **1** : 43) divided Mannerheim's genus *Platystethus* into two genera, *Platystethus* and *Pyctocraerus*; but since he made *Staphylinus morsitans*, which is the type of *Platystethus* (fixed by Westwood, 1838), the type of his *Pyctocraerus*, this genus becomes synonymous with Mannerheim's genus. I propose the name *Craetopycrus* for Thomson's *Platystethus*, for which he cited *Oxytelus cornutus* Gravenhorst, 1802, as the type.

Cotysops nom. n.

For the genus *Hesperophilus* Stephens, 1829 (*Nomencl. Brit. Ins.* : 24) Westwood in 1838 cited as type the species *Staphylinus fracticornis* Paykull, 1790. Thomson's citation of *Staphylinus arenarius* Paykull, 1790, is therefore invalid. His use of the name cannot be maintained either. A new name is required for *Hesperophilus sensu* Thomson *nec* Stephens, and I propose the name *Cotysops*, the species cited by Thomson becoming the genotype.

Thiphonilus nom. n.

The genus *Thinophilus* Mulsant & Rey, 1878 (*Ann. Soc. Agric. Lyon* (4) **10** : 764) has as yet no type fixed : furthermore the name is preoccupied in use by Wahlberg, 1844 (Diptera). In its place I propose the name *Thiphonilus*, and cite *Thinobius linearis* Kraatz, 1859, as the type.

Alapsodus nom. n.

The name *Anodus* Nordmann, 1837, is a homonym, having been used by Spix, 1829 (Pisces). In its place I propose the name *Alapsodus*, and cite *Anodus falcifer* Nordmann, 1837, as the type of the genus.

Bobitobus nom. n.

Samouelle's genus *Bolitobius* was monobasic, with *Staphylinus analis* Paykull, 1789, as the type (1819, *Ent. Comp.* : 176). The type-citations there-

fore of Westwood and Thomson, who cited *Staphylinus lunulatus* Linnaeus, 1761, are invalid, and the name cannot be used for this species and its allies, as has been done by Thomson and subsequent authors. I propose in its place the name *Bobitobus*, the type still being *Staphylinus lunulatus* Linnaeus.

It must be noted that Thomson in spelling the name " *Boletobius* " was not creating a new name, for he attributes it to Leach, to whom also Samouelle attributed *Bolitobius*, and also subsequently himself spells it correctly. The two spellings must therefore be regarded as synonymous.

Schinomosa nom. n.

Since Thomson (1859, *Skand. Coleopt.* **1** : 47) made *Tachinus splendidus* Gravenhorst, 1806, the type of his genus *Ischnosoma*, and Westwood had already (1838) fixed this species as the type of *Mycetoporus* Mannerheim, 1831, these two genera are synonymous. Furthermore Thomson's citation of *Tachyporus punctus* Gyllenhal, 1810, as type of *Mycetoporus* is invalid, and a new name is required for the genus of that name as limited by him. I propose the name *Schinomosa*, *Tachyporus punctus* Gyllenhal remaining the type.

Pischnopoda nom. n.

Since Westwood fixed the type of *Ischnopoda* Stephens, 1835, as *Aleochara atra* Gravenhorst, 1806 (= *Aleochara aterrima* Stephens, 1832, *nec* Gravenhorst, 1802), the name cannot be applied to the section of *Tachyusa* Erichson, which has *Staphylinus leucopus* Marsham, 1802, as type, namely the section *Ischnopoda* Thomson, 1859. For this I propose the name *Pischnopoda* with the same type.

Lepla nom. n.

Since Duponchel (1841) fixed the type of *Myrmedonia* Erichson as *Staphylinus canaliculatus* Fabricius, 1787, this generic name cannot be used *sensu* Mulsant & Rey (1874, *Ann. Soc. Agric. Lyon* (4) **6** : 82) for a section of *Zyras* Stephens. I propose for this section the name *Lepla* with *Aleochara lugens* Gravenhorst, 1802, as the genotype.

Lomechusoides nom. n.

The type of *Lomechusa* Gravenhorst, 1806, having been fixed by Latreille (1810) as *Staphylinus emarginatus* Paykull, 1789, the name cannot be used for *Staphylinus strumosus* Fabricius, 1775, as has been done by most authors. I propose in its place the name *Lomechusoides*, *Staphylinus strumosus* Fabricius being the type.

A full discussion of the confusion with regard to the generic names *Lomechusa*, *Atemeles* and *Dinarda* will appear in my paper on the generic names of the British STAPHYLINIDAE in the *Generic Names of British Insects.*

Sedomoma nom. n.

Thomson (1859, *Skand. Coleopt.* **1** : 37) formed two genera *Bessobia* and *Demosoma*. He fixed as type for these the species *Oxypoda testacea* Erichson, 1837, and *Oxypoda formiceticola* Märkel, 1841, respectively. These two species being considered now to be congeneric, the two genera become synonymous. *Demosoma*, therefore, cannot be used in the sense in which it is used in the *Coleopt. Cat.* for *Oxypoda soror* Thomson, 1855, and its allies, and Fenyes's fixation of this species is invalid. For this group I propose the name *Sedomoma*, with *Oxypoda soror* Thomson as the genotype.